

**SATELLITE COMMUNICATION SYSTEM
WITH GATEWAY SWITCH NETWORKS**

ABSTRACT

A communication system having gateway filter and switching networks in forward and return channels of a frequency reuse communication satellite. The system couples subscriber terminals to the Internet or other terrestrial network by way of one or more gateways. The system cross-straps gateway-to-user beam connectivity provided

- 5 by the communication satellite to allow full coverage of all user beams with a subset of the gateways having reduced frequency reuse. An exemplary system comprises a communication satellite having a return channel and a forward channel. One or more gateways are coupled to the Internet or other terrestrial network and communicate with subscriber terminals by way of the return and forward channels provided by the satellite.
- 10 The return and forward channels each comprise a filter and switching network that selectively couple signals between the one or more gateways and the subscriber terminals. The filter and switching networks selectively couples signals between selected gateways and selected subscriber terminals using predetermined beams.

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